

Trend Study 25B-6-99

Study site name: Little Deer Peak.

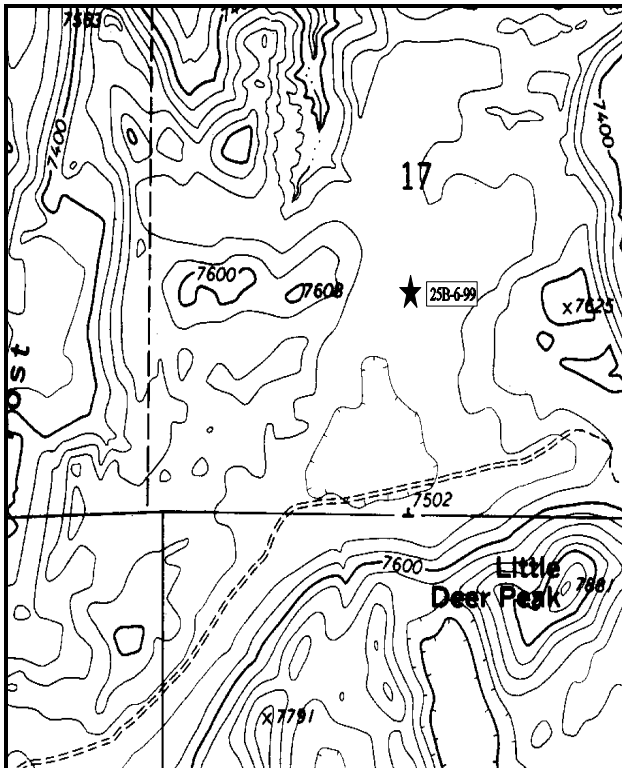
Range type: Big Sagebrush-Grass.

Compass bearing: frequency baseline 160°M.

Footmark (first frame at) 5 feet, footmarks (frequency belts) line 1 (11 & 95ft), line 2 (34ft), line 3 (59ft), line 4 (71ft).

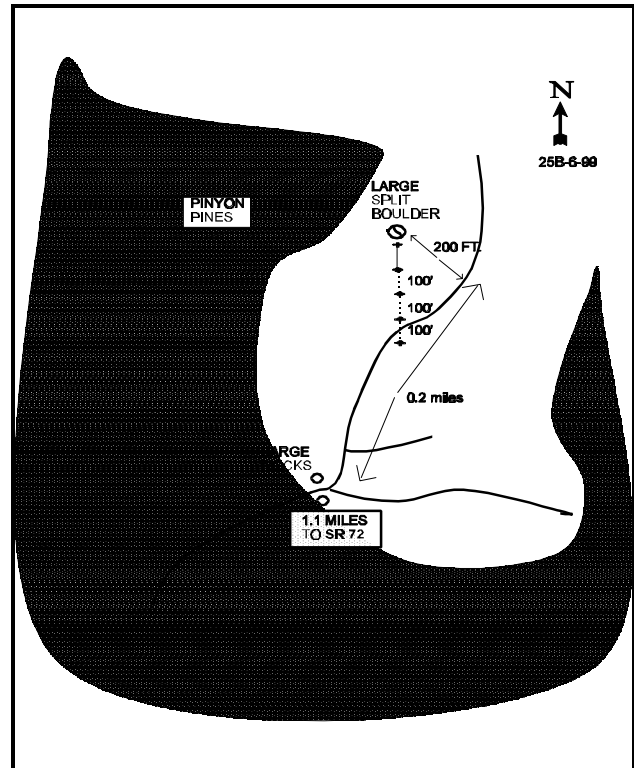
LOCATION DESCRIPTION

From Salina, go 37.5 miles east on I-70 to a rest area. From the rest area, go approximately 3 miles east on the frontage road to Fremont Junction. Turn south on SR 72 and drive 4.1 miles to a left turn across from Frying Pan Flat. Go left down this road for 1.1 miles to a fork between 2 large boulders. Take the left fork 0.05 miles to another fork. Go left 0.2 miles to a large split boulder which is 200 feet to the left of the road. The 0-foot baseline stake is 15 feet south of the split boulder and has a red browse tag #7082 attached.



Map Name: John's Peak, Utah

Township 24S, Range 5E, Section 17



Diagrammatic Sketch

UTM 4285555.495 N, 466676.983 E

DISCUSSION

Trend Study No. 25B-6 (45-3)

The Little Deer Peak transect samples a sagebrush flat of about 260 acres that is surrounded by low hills with pinyon-juniper cover. The flat has a slope of a little over 1% and an elevation of 7,560 feet. Range type is Wyoming big sagebrush-grass. Two species of grass make up about 99% of the total grass cover. The BLM grazing allotment is for cattle from March 16 to May 31. Grazing pressure appears to have been heavy in the past, as a warm season grass dominates the area by contributing 84% of the total grass cover. It has not received much use since 1982 and there were no recent signs of livestock or big game use in 1985. No deer pellet groups were found on the study area in 1985, but in 1991 there were 5 deer days use/acre (12 ddu/ha) and 9 elk days use/acre (22 edu/ha) estimated. In 1999, the pellet group transect showed 31 deer days use/acre (76 ddu/ha), 41 elk days use/acre (100 edu/ha), and 7 cow days use/acre (18 cdu/ha). There is good cover on the slopes nearby.

The soil texture is a sandy clay loam with a neutral pH (7.3). Infiltration is poor, as evidenced by the puddles that formed from small amounts of rain which fall on the site. Effective rooting depth is just over 12 inches with little surface rock and pavement cover. Although there is a fair amount of vegetative cover, there is inadequate litter cover. Much of the litter comes from dead sagebrush. Pavement and rock accounts for <10% of the ground cover. Thirty-seven percent of the surface was bare soil in 1985, which increased to 42% in 1991, then went down to 38% in 1999. It appears that the bare interspaces have been subject to soil loss and compaction from trampling. Moderate pedestalling is evident for grasses and shrubs. Many of the large bare areas present are the result of red harvester ant activities. Some areas are denuded of vegetation up to 20 feet in diameter. Grasshoppers were also present in moderately high numbers in 1991. The large patches of blue grama appear to grow on the more clay soils where the soil penetrometer had readings 4-5 inches more shallow. There was a noticeable caliche layer at approximately 12 inches in depth which could be restrictive to plant roots.

Wyoming big sagebrush is the most abundant browse plant, providing 82% of the total browse cover in 1999. The plants are scrubby and stunted and look very similar to black sagebrush in stature. Average size is only 12 inches high with about a 16 to 24 inch crown. Initially in 1985, 21% of the big sagebrush plants had poor vigor with over 42% being heavily hedged. When they were sampled in 1991, these numbers were respectively 6% with poor vigor and 8% heavily hedged. By 1999, those with poor vigor remained at 6%, while those with heavy use decreased to only 2%. Percentage of young plants present in the population has been quite variable through the years, currently it is at 11%. Low rabbitbrush makes up a good proportion of the browse population, however it only makes up 8% of the browse cover. The plants are vigorous and the population appears to be stable at this time. Other increaser species like broom snakeweed are indicators of a disturbed site.

Quadrat frequency and diversity of herbaceous species is low. Two species of grass, blue grama and bottlebrush squirreltail, are fairly common. However, blue grama dominates by providing 84% of the grass cover in 1999. There are a few scattered sedges on site that were not sampled in 1991 or 1999. Scarlet globemallow and low fleabane are the only common forbs and they can not provide much usable forage.

1985 APPARENT TREND ASSESSMENT

The soil trend appears to be stable. Although there is a lot of bare soil exposed, the area is very level and no gullies are present. Vegetative trend appears downward as the Wyoming big sagebrush appears to be declining. There are no desirable species to move in and replace it. The herbaceous species provide little forage and include several species of increasers.

1991 TREND ASSESSMENT

Soil trend would have to be considered slightly downward, not because of increase in soil erosion, but because of the increase in bare soil and decrease in basal plant cover. This could turn around with an increase in precipitation. The key browse species, Wyoming big sagebrush, has lost 47% of its population since 1985. Percent decadency has decreased from 35 to 29%. This would indicate that the initially high densities and the extended drought have thinned out the sagebrush thereby lowering the percentage of the population classified as being in poor vigor from 21% down to only 6%. Low rabbitbrush has more than doubled it's density in the interim. There is very low diversity of species for the grasses and forbs. It has stayed about the same, with some gains and some losses for both groups of plants.

TREND ASSESSMENT

soil - slightly down

browse - down

herbaceous understory - stable, but still very poor condition

1999 TREND ASSESSMENT

Soil trend would be considered stable with a decrease in percent bare ground, but still in poor condition overall. With the sample size for browse being increased by more than three times, the browse density will be changed somewhat. The key browse species, Wyoming big sagebrush, now has a density of 6,200 plants/acre. What is more important to note for changes in trend is that percent decadency has stayed about the same; percent young is still moderately high at 11%; the percentage of the decadent class that were classified as dying has remained almost unchanged since 1985; those classified with poor vigor have gone from 21% and remained stable at 6%; the number of plants with heavy use has decreased from 42% to 8%, now it is only 2%. All these changed characteristics would indicate a slightly improving trend for sagebrush on this site. There is very low diversity of species for the grasses and forbs. It has stayed about the same, with some gains and some losses for both groups of plants.

TREND ASSESSMENT

soil - stable, but poor condition

browse - slightly improving

herbaceous understory - stable, but still very poor condition

HERBACEOUS TRENDS --

Herd unit 25B, Study no: 6

Type	Species	Nested Frequency			Quadrat Frequency			Average Cover % '99
		'85	'91	'99	'85	'91	'99	
G	Agropyron cristatum	-	-	-	-	-	-	.00
G	Bouteloua gracilis	_a 286	_b 321	_a 278	96	97	95	14.19
G	Carex spp.	_b 9	_a -	_a -	5	-	-	-
G	Oryzopsis hymenoides	_a -	_b 11	_a -	-	5	-	-
G	Sitanion hystrix	_a 92	_a 115	_b 188	40	52	77	2.71
Total for Annual Grasses		0	0	0	0	0	0	0
Total for Perennial Grasses		387	447	466	141	154	172	16.92
Total for Grasses		387	447	466	141	154	172	16.92

T y p e	Species	Nested Frequency			Quadrat Frequency			Average Cover % 09
		'85	'91	'99	'85	'91	'99	
F	Arabis spp.	_a -	_a -	_b 7	-	-	3	.01
F	Astragalus spp.	_b 6	_a -	_a -	3	-	-	-
F	Chaenactis douglasii	1	-	-	1	-	-	-
F	Draba spp. (a)	-	-	1	-	-	1	.00
F	Erigeron pumilus	_b 33	_c 50	_a 8	14	24	4	.07
F	Penstemon comarrhenus	3	-	-	2	-	-	-
F	Penstemon spp.	2	6	2	1	4	1	.00
F	Sphaeralcea coccinea	_a 105	_{ab} 119	_b 152	46	48	60	1.43
Total for Annual Forbs		0	0	1	0	0	1	0.00
Total for Perennial Forbs		150	175	169	67	76	68	1.52
Total for Forbs		150	175	170	67	76	69	1.52

Values with different subscript letters are significantly different at % = 0.10 (annuals excluded)

BROWSE TRENDS --

Herd unit 25B, Study no: 6

T y p e	Species	Strip Frequency 09	Average Cover % 09
B	Artemisia frigida	9	.09
B	Artemisia nova	1	-
B	Artemisia tridentata wyomingensis	84	13.93
B	Chrysothamnus viscidiflorus viscidiflorus	62	1.35
B	Echinocereus triglochidatus	4	-
B	Gutierrezia sarothrae	50	1.60
B	Leptodactylon pungens	4	-
B	Opuntia spp.	12	.01
B	Pediocactus simpsonii	2	-
B	Pinus edulis	0	-
Total for Browse		228	17.00

BASIC COVER --

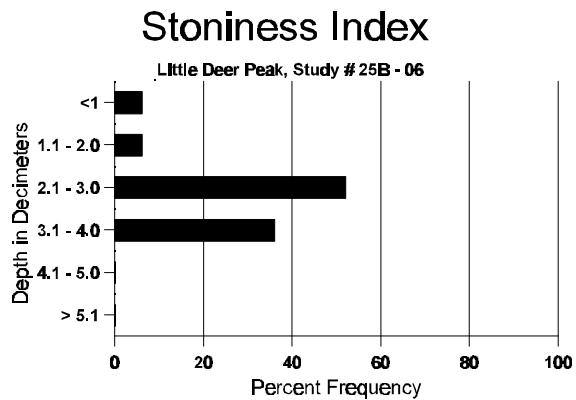
Herd unit 25B, Study no: 6

Cover Type	Nested Frequency 09	Average Cover %		
		'85	'91	'99
Vegetation	321	17.50	14.75	34.75
Rock	91	2.00	2.00	2.86
Pavement	218	13.50	7.25	4.82
Litter	328	29.00	32.25	23.83
Cryptogams	69	1.25	1.75	1.10
Bare Ground	336	36.75	42.00	38.14

SOIL ANALYSIS DATA --

Herd Unit 25B, Study # 06, Study Name: Little Deer Peak

Effective rooting depth (inches)	Temp °F (depth)	pH	%sand	%silt	%clay	%OM	PPM P	PPM K	dS/m
12.5	54.0 (12.5)	7.3	49.8	25.2	24.9	1.4	13.1	153.6	0.5



PELLET GROUP FREQUENCY --

Herd unit 25B, Study no: 6

Type	Quadrat Frequency 09	Pellet Transect Days Use/Acre (ha) 09
Rabbit	41	n/a
Elk	17	41 (101)
Deer	12	31 (77)
Cattle	1	7 (17)

BROWSE CHARACTERISTICS --

Herd unit 25B, Study no: 6

Herb Unit 25B, Study No. 6																		
A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Artemisia frigida																		
S	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	5	-	-	-	-	-	-	-	-	5	-	-	-	100		5	
Y	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	2	-	-	-	-	-	-	-	-	2	-	-	-	40		2	
M	85	1	-	-	-	-	-	-	-	-	1	-	-	-	66	10	10	
	91	-	-	1	-	-	-	-	-	-	1	-	-	-	66	2	6	
	99	8	2	2	1	-	-	-	-	-	13	-	-	-	260	5	5	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'85		00%			00%			00%			+ 0%							
'91		00%			100%			00%			+78%							
'99		13%			13%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'85	66	Dec:	-			
												'91	66		-			
												'99	300		-			
Artemisia nova																		
D	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	5	-	-	-	-	-	-	-	-	-	-	-	5	100		5	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'85		00%			00%			00%										
'91		00%			00%			00%										
'99		00%			00%			100%										
Total Plants/Acre (excluding Dead & Seedlings)												'85	0	Dec:	0%			
												'91	0		0%			
												'99	100		100%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Artemisia tridentata wyomingensis																		
S	85	1	-	-	-	-	-	-	-	-	1	-	-	-	66		1	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	99	4	-	-	5	-	-	-	-	-	9	-	-	-	180			9
Y	85	3	16	15	-	-	-	-	-	-	32	-	2	-	2266		34	
	91	4	-	-	-	-	-	-	-	-	4	-	-	-	266			4
	99	26	8	-	-	-	-	-	-	-	33	1	-	-	680			34
M	85	14	18	28	-	-	-	-	-	-	50	6	4	-	4000	10	15	60
	91	30	10	3	5	-	-	3	-	-	50	1	-	-	3400	10	16	51
	99	100	76	6	-	-	-	-	-	-	179	3	-	-	3640	12	24	182
D	85	2	31	17	-	-	-	-	-	-	26	-	14	10	3333		50	
	91	12	5	3	2	-	-	-	-	-	17	-	-	5	1466			22
	99	65	26	-	3	-	-	-	-	-	75	-	-	19	1880			94
X	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	1020			51
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'85		45%			42%			21%			-47%							
'91		19%			08%			06%			+17%							
'99		35%			02%			06%										
Total Plants/Acre (excluding Dead & Seedlings)												'85	9599	Dec:	35%			
												'91	5132		29%			
												'99	6200		30%			
Chrysothamnus viscidiflorus viscidiflorus																		
S	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	91	1	-	-	-	-	-	-	-	-	1	-	-	-	66			1
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
Y	85	21	2	-	-	-	-	-	-	-	23	-	-	-	1533		23	
	91	23	3	-	1	-	-	2	-	-	29	-	-	-	1933			29
	99	12	-	-	-	-	-	-	-	-	12	-	-	-	240			12
M	85	44	1	-	-	-	-	-	-	-	45	-	-	-	3000	9	10	45
	91	27	21	6	6	-	-	12	-	-	72	-	-	-	4800	3	6	72
	99	144	4	-	3	-	-	-	-	-	146	-	5	-	3020	6	10	151
D	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	91	2	4	4	2	-	-	3	-	-	10	1	-	4	1000			15
	99	9	4	-	1	-	-	-	-	-	7	-	-	7	280			14
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'85		04%			00%			00%			+41%							
'91		24%			09%			03%			-54%							
'99		05%			00%			07%										
Total Plants/Acre (excluding Dead & Seedlings)												'85	4533	Dec:	0%			
												'91	7733		13%			
												'99	3540		8%			

A G R E	Y	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Echinocereus triglochidatus																		
Y	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	1	-	-	-	-	-	-	-	-	-	1	-	-	20		1	
M	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	99	4	-	-	-	-	-	-	-	-	-	4	-	-	80	1	3	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'85		00%			00%			00%										
'91		00%			00%			00%										
'99		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'85	0	Dec:	-			
												'91	0		-			
												'99	100		-			
Gutierrezia sarothrae																		
S	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	17	-	-	-	-	-	-	-	-	-	17	-	-	340		17	
Y	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	8	1	-	-	-	-	-	-	-	-	9	-	-	180		9	
M	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	99	137	-	-	1	-	-	-	-	-	-	138	-	-	2760	6	9	
X	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	40		2	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'85		00%			00%			00%										
'91		00%			00%			00%										
'99		.68%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'85	0	Dec:	-			
												'91	0		-			
												'99	2940		-			
Leptodactylon pungens																		
M	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	99	3	-	-	-	-	-	-	-	-	-	3	-	-	60	5	3	
D	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	1	-	-	-	-	-	-	-	-	-	-	-	1	20		1	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'85		00%			00%			00%										
'91		00%			00%			00%										
'99		00%			00%			25%										
Total Plants/Acre (excluding Dead & Seedlings)												'85	0	Dec:	0%			
												'91	0		0%			
												'99	80		25%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Opuntia spp.																		
S	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	2	-	-	-	-	-	-	-	-	-	-	-	-	40		2	
Y	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	2	-	-	-	-	-	-	-	-	-	-	-	-	40		2	
M	85	3	-	-	-	-	-	-	-	-	3	-	-	-	200	5	7	3
	91	-	-	-	-	-	-	2	-	-	2	-	-	-	133	2	9	2
	99	15	-	-	-	-	-	1	-	-	15	-	-	1	320	3	9	16
D	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	1	-	-	-	-	-	-	-	-	-	-	-	1	20		1	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'85		00%			00%			00%			-34%							
'91		00%			00%			00%			+65%							
'99		00%			00%			11%										
Total Plants/Acre (excluding Dead & Seedlings)												'85	200	Dec:	0%			
												'91	133		0%			
												'99	380		5%			
Pediocactus simpsonii																		
Y	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	2	-	-	-	-	-	-	-	-	2	-	-	-	40		2	
M	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	0	1	3	0
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'85		00%			00%			00%										
'91		00%			00%			00%										
'99		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'85	0	Dec:	-			
												'91	0		-			
												'99	40		-			
Pinus edulis																		
S	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	91	-	-	-	-	-	-	1	-	-	1	-	-	-	66		1	
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'85		00%			00%			00%										
'91		00%			00%			00%										
'99		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'85	0	Dec:	-			
												'91	0		-			
												'99	0		-			